AES Agremax

Issue:
Land disposal and stockpiling of "Agremax," an aggregate of ash generated by the AES coal fired power plant in Guayama, PR (the "AES facility") poses a threat due to dust concerns and the possibility of leaching into the groundwater. A beneficial reuse of Agremax that is acceptable to the PR Environmental Quality Board (EQB) and EPA needs to be established.

Status:
The Region is negotiating a follow-up CWA Administrative Consent Order that addresses stormwater violations and memorializes BMPs and the appropriate disposition of Agremax stored and generated at the AES facility.

Options and Recommendations:
We are using the CWA Consent Order as a mechanism to achieve proper Agremax management. We will continue regular meetings with EQB to remain in close coordination with them.

Background:
At our urging, EQB issued an August 2014 Resolution retracting its earlier Resolutions regarding Agremax and requiring that Agremax no longer be indiscriminately used as a product and instead be disposed of or used as alternative daily cover in lined landfills, or be used in another way approved by EQB. Agremax had previously been placed on land in the municipalities of Arroyo, Guayama, and Salinas, and EPA observed that Agremax had been disposed of in great amounts over extensive areas, some in proximity to rivers, streams, and wetlands. Results of composite samples taken by EPA and analyzed by an EPA-ORD contract laboratory, using two of the LEAF methods, showed that the heavy metal levels in Agremax are no different than that of typical coal ash. AES has suspended land placement of Agremax and is now stockpiling it on-site. We understand that AES has considerably reduced its stockpile over the past year, and has shipped over 160,000 tons of Agremax off-site for use as alternative daily cover in Puerto Rico and for other uses on the mainland U.S.

In May 2010, EPA published a proposed rule to ensure the safe disposal and management of coal ash. Under the proposed rule, the Agency would continue to promote the beneficial reuses of coal ash, in which coal combustion residuals are recycled as components of products instead of being placed in impoundments or landfills. A final rule is expected to be issued on 12/19/14.

In a September 2010 letter, representatives of the environmental group Earthjustice and a private citizen, Ms. Ruth Santiago, Esq., had requested that EPA look into the management of Agremax, stating that the relevant EQB beneficial use determination had been repealed, that Agremax had continued to be used inappropriately as fill, and that such use posed environmental threats. On this basis, they urged that EPA conduct groundwater and other monitoring. Our investigation of this issue was also supported by the Office of Resource Conservation and Recovery (coal combustion residuals rulemaking work group lead Alex Livniat, PhD). We subsequently confirmed that the (retracted) EQB Resolutions and Notifications providing the Agremax solid waste exemption were in effect.

In June 2011, EPA met with the coal combustion product manager for AES P.R., who informed us that the Guayama coal fired power plant mixes all of its bottom and fly ash with the spent lime from its air pollution control equipment, to produce over 4,000 tons/week of Agremax. EPA accompanied several P.R. environmental advocates on site visits to ten areas where Agremax had been placed on land in the municipalities of Arroyo, Guayama, and Salinas, and observed that Agremax had been disposed of in great amounts over extensive areas, some in proximity to rivers, streams, and wetlands. We met with the P.R. Department of Health to review their groundwater data, obtained from wells near the land placement sites (no exceedences observed), and spoke at length with EQB, who subsequently provided us their aquifer ground water level data (no relevant contaminant analysis). We also reviewed ground water data from the P.R. Aqueduct and Sewer Authority (no exceedences observed).

We are aware of potentially analogous damage cases documented by EPA and others, involving coal ash disposal. A 2007 EPA report “Coal Combustion Waste Damage Case Assessments” documents known damage cases from the mismanagement of coal ash in unlined landfills and surface impoundments and the subsequent contamination of drinking water aquifers through the leaching and ground water transport of contaminants in the ash.

The retracted EQB Resolutions and Notifications were based on Agremax not failing the RCRA toxicity characteristic leaching procedure (TCLP), as detailed in a 2007 study and report by the P.R. legislature. Typically, coal ash does not fail TCLP. However, EPA has concerns about its toxicity (see below paragraph). EPA developed four new test methods for evaluating leaching in the environment, called the leaching environmental assessment framework, or "LEAF", which have been published as official EPA test methods on the EPA SW-846 website. However, EPA has no plan to replace the regulatory uses of the TCLP (i.e., to make hazardous waste determinations) with the new test methods. Rather, the LEAF tests will be used where TCLP is not required or best suited (the TCLP was designed to model leaching from hazardous waste within a landfill), in order to provide an estimate of contaminant release under various environmental conditions.

In March 2012, EPA, accompanied by EQB, obtained a composite sample of "manufactured" Agremax stored at the AES Guayama facility. The composite sample was analyzed by an EPA-ORD contract laboratory, using two of the LEAF methods. The analytical results gave us a clearer understanding of the heavy metal levels in Agremax under a range of pH conditions. ORD stated that “Agremax” had contaminant levels no different than observed in a "typical" coal ash. ORD also performed follow-up analysis, which confirmed these findings.